

B 2118

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2007.

Third Semester

Chemical Engineering

CH 236 — ORGANIC CHEMISTRY

(Common to Leather Technology/Textile Chemistry/Textile Technology)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. How does D-glucose react with phenylhydrazine?
2. What happens when cellulose reacts with hot H₂SO₄ followed by hydrolysis?
3. $R-Mg-X + CO_2 \longrightarrow ? \xrightarrow{H_2O} ?$ complete the reaction.
4. What happens when R-Mg-X is treated with CH₃CHO? Give the reaction.
5. Write the structure of alizarin.
6. Define the chromophore and give an example.
7. Give one method of identification of an oil.
8. What happens when pyrrole reacts with $CHCl_3/OH^\ominus$?
9. What is meant by denaturation?
10. Write the structure of sulpha pyridine and its application.

PART B — (5 × 16 = 80 marks)

11. (a) Explain the structure of cellulose. What happens when cellulose is methylated and then hydrolyzed? Explain the synthesis of rayon. (16)

Or

- (b) How are the carbohydrates classified? What happens when D (+) glucose reacts with
- (i) HI + P
 - (ii) HCN
 - (iii) NH_2OH
 - (iv) Acetic anhydride
 - (v) $\text{CH}_3\text{OH}/\text{HCl}$
 - (vi) HNO_3
 - (vii) Br_2
 - (viii) Dimethyl sulphate and NaOH. (16)
12. (a) Explain the preparation of Grignard reagent. What is the role of dry ether in its preparation? What happens when ethyl magnesium bromide reacts with (16)
- (i) $\text{CH}_3 - \text{C} \equiv \text{N}$
 - (ii) CH_3COCH_3
 - (iii) H_2O
 - (iv) HCHO.

Or

- (b) What are oils and fats? Explain with equations if necessary the following terms with reference to oils and fats.
- (i) hydrolysis
 - (ii) hydrogenation
 - (iii) hydrogenolysis
 - (iv) drying
 - (v) rancidification. (16)
13. (a) Outline any two methods of preparation of indole. Give the structure of the product with pyridine of the following reagents :
- (i) NaNH_2
 - (ii) $\text{C}_6\text{H}_5 \text{Li}$
 - (iii) KOH
 - (iv) $\text{SO}_3, \text{H}_2\text{SO}_4, \Delta$. (16)

Or

(b) Give any two methods of preparation of Furan. What happens when furan reacts with (i) Br_2 (ii) HNO_3 , AC_2O (iii) $\text{RCOCl}/\text{AlCl}_3$, Δ (iv) HCN/HCl , H_2O . (16)

14. (a) (i) Outline the synthesis of malachite green and methylorange. (8)

(ii) Write short notes on colour and constitution of dyes. (8)

Or

(b) (i) Explain the natural and reactive dyes with suitable examples and their applications. (8)

(ii) Explain the synthesis of Eosin. (8)

15. (a) What are antimalarial drugs? Explain the synthesis of chloroquine and isopentaquine. (16)

Or

(b) Discuss the classification of proteins and give any three methods of identification of proteins with appropriate reactions. (16)